

REMARKS

Claims 1 – 32 are pending herein. Claims 12 – 14 and 30 – 32 stand withdrawn from consideration.

Applicants respectfully traverse the § 103 rejections of claims 1 – 11 and 15 – 29 as being unpatentable over Hacker et al (US 2003/0186816) in view of various combinations of the secondary references to Nabors et al (US 2005/0233907), Cornes (US 6,924,250) and Hopkinson et al (US 6,746, 988).

By way of summary, the problem addressed by the present invention is the provision of a suspension concentrate or suspoemulsion formulation comprising mesotrione which exhibits improved physical storage stability, handling and in particular dilution characteristics. This problem is solved by the present invention by providing such a formulation wherein the mesotrione therein has an average and median particle size of less than 1 micron.

As noted by the Examiner, Hacker et al. (Hacker) relates to 3-way (component A, B and C) herbicide combinations comprising specific sulfonylurea herbicides. It is mentioned that component C may be one of 57 compounds, of which mesotrione just happens to be one (compound C8). Hacker further discloses that the herbicidal composition may (amongst others) be provided as a suspension concentrate (SC) or a suspoemulsion (SE). However, there is no specific teaching in Hacker of a suspension concentrate or suspoemulsion comprising mesotrione.

The secondary references to Nabors, Cornes and Hopkinson et al do not remedy the deficiencies of Hacker.

More specifically, the Examiner cites Nabors et al. (Nabors) for the proposition that Nabors would suggest the combination of mesotrione with acetamides herbicides. However, Hacker alone or in combination with Nabors still contains no teaching or suggestion relating to submicron mesotrione SCs (claim 1) or SEs (claim 15); nor that submicron mesotrione is useful to improve SC and SE formulations of mesotrione.

Likewise, the Examiner cites Cornes for the proposition that Cornes would suggest utilization of mesotrione chelates in herbicide combinations. However, Hacker alone or in combination with Cornes still contains no teaching or suggestion relating to submicron mesotrione SCs (claim 1) or SEs (claim 15); nor that submicron mesotrione is useful to improve SC and SE formulations of mesotrione.

Finally, the Examiner cites Hopkinson for the proposition that Hopkinson teaches use of mesotrione as an agriculturally active compound in the compositions therein, and suggests an average particle size of about 1 to about 20 microns. However, mesotrione is included in a long list of other agriculturally active compounds including fungicides, insecticides and other herbicides. No teaching regarding submicron particle sizes for any of the agriculturally active compounds is provided. Accordingly, Hacker alone or in combination with Hopkinson still contains no teaching or suggestion relating to submicron mesotrione SCs (claim 1) or SEs (claim 15); nor that submicron mesotrione is useful to improve SC and SE formulations of mesotrione.

In addition, Hacker alone or in any combination with Nabors, Cornes or Hopkinson does not teach or suggest:

- claim 2 – a submicron mesotrione SC having an average particle size of 800 nanometers;
- claims 8 – 9 – a submicron mesotrione SC further comprising a water-soluble active ingredient such as glyphosate or glufosinate,
- claims 10 – 11 – a pesticidal composition prepared by diluting a submicron mesotrione SC in water,
- claim 16 – a submicron mesotrione SE having an average particle size of 800 nanometers;
- claims 19 – 23 – a submicron mesotrione SE further comprising at least one liquid, water insoluble active ingredient selected from acetamide herbicides and safeners including S-metolachlor and benoxacor
- claims 24 – 25 – a submicron mesotrione SE further comprising at least one solid, water insoluble active ingredient such as a triazine herbicide,
- claims 26 – 27 – a submicron mesotrione SE further comprising a water soluble active ingredient in the aqueous phase such as glyphosate or glufosinate, and

- claims 28 – 29 - a pesticidal composition prepared by diluting a submicron mesotrione SE in water.

In the absence of the teaching of the presently claimed invention, Applicants respectfully submit that one of ordinary skill in the art would not consider the present claims to be prima facie obvious over Hacker. It is only with the benefit of hindsight of the present invention that the Examiner infers one of ordinary skill would consider selecting mesotrione as component C and prepare the three-way compositions as SC or SE formulations. However, even if such selections are made, the resulting herbicide formulations would still not relate to submicron mesotrione formulations as required by the present claims. Accordingly, the claimed subject matter is considered to be non-obvious over Hacker taken alone or in any combination with Nabors, Comes or Hopkinson.

Moreover, Applicants respectfully submit that in reaching a conclusion of obviousness, the Patent and Trademark Office must consider the "invention as a whole," which includes evidence of the invention's unexpected results. See In re Margolis, 228 USPQ 940 (Fed. Cir. 1986). Specifically, with regard to mesotrione containing formulations, the experiments and data referred to in Table 2 of the description show the redispersion properties of sediment material – and how these are improved when sub-micron mesotrione is used. In the sediment, the particle phase volume is very high and the redispersibility – rather than being governed by particle size per se - is actually governed by the cohesively of the sediment, that is by unpredictable rheological properties. Thus, the technical success achieved cannot be predicted on the basis of the teachings of Hacker and the secondary references as these are silent as to the rheological properties of submicron mesotrione formulations.

In summary it is submitted that the problem addressed by the present invention – that is the provision of a suspension concentrate or suspoemulsion formulation comprising mesotrione which exhibits improved physical storage stability, handling and in particular dilution characteristics – is not obvious in view of Hacker taken alone or in combination with the secondary references. None of the references are specifically concerned with mesotrione formulations – and thus provides no teaching regarding the formulation properties of this particular herbicide that would motivate the skilled person to combine them. It is only with the benefit of hindsight that the Examiner has chosen

to mosaic the teachings of the documents in the manner suggested in order to arrive at the present invention.

In view of the above remarks, Applicants submit that the present claims are allowable over the cited art. Withdrawal of all rejections is respectfully requested, along with issuance of a Notice of Allowance. Applicants invite the Examiner to telephone the undersigned attorney of record if the Examiner feels that the call will be beneficial to advance prosecution of the application.

Respectfully submitted,

USPTO Customer No. 26748
Syngenta Crop Protection, Inc.
Patent and Trademark Dept.
410 Swing Road
Greensboro, NC 27409
(336) 632-7895

/William A. Teoli, Jr./
William A. Teoli, Jr.
Attorney for Applicants
Reg. No. 33,104

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